U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

DATE:	**5/31/97**
SUBJECT:	Naples Truck Stop Removal Action, Vernal, UT
FROM:	H. Hays Griswold, OSC Phone: (303) 312-6809
TO:	Director, ERD
POLREP No.:	**POLREP 46**

II. BACKGROUND

SITE No.:	43P808L008
Case No.:	U940169
FPN No.:	114009
D.O. No.:	NA
Response Agency:	EPA Region VIII
Address:	999 18th Street, Suite 500 Denver, CO 80202
Response Authority:	CWA, OPA (1990)
Party Conducting Action:	EPA (PRFA w/USACE)
ERNS No.:	U940169
NPL Status:	NA
State Notification:	State requested EPA action
Action Memorandum Status:	NA
Start Date:	February 22, 1994
Demobilization Date:	NA
Completion Date:	To Be Determined

III. SITE INFORMATION

A. Incident Category

The incident occurred at an active facility - a Service Station/Truck Stop/Petroleum Bulk Distributor.

B. Site Description

1. Site Description

No change from previous Polreps.

2. Description of Threat

No change.

C. Site Evaluation Results

Preliminary sampling results of water effluent to POTW with recovery wells RW-1, RW-2, RW-3, RW-4, RW-9, RW-10, RW-11 and RW-12 in operation indicated levels of TPH as gasoline at **5.62 mg/l**, below the discharge limit of 25 mg/l for TPH (sample collected on **5/6/97**). Water analysis was performed for gasoline/BTEX by EPA test methods Mod-8015 and SW8020.

Preliminary results of air samples collected from the treatment system on **5/6/97** indicated **220 ppmv** for total volatile petroleum hydrocarbons (TVPH) as gasoline within the final air influent to the vapor treatment unit. This value is lower than the last reported value collected in **April** of **2,000 ppmv** for TVPH. The decrease in vapor concentrations occurred during shutdown of the groundwater extraction system from 10 April to 1 May 1997 to install a new vapor treatment system. The drop in vapor concentrations during this shutdown does not match the response observed during winter shutdown where overall concentrations increased. These air samples were analyzed according to modified EPA Method TO-3.

Monthly groundwater sampling from fourteen of the fifteen existing monitoring wells continues to indicate detectable levels of hydrocarbon contamination within **six** of the tested wells. A maximum concentration of **17.6 mg/l** hydrocarbons as gasoline was detected from monitoring well No. MW-10 located in the center of the suspected plume of groundwater contamination. This level of contamination is **lower** than the previous month's value of **21.8 mg/l** within the same well. Water analysis was performed for gasoline/BTEX by EPA test methods Mod-8015 and SW8020.

IV. RESPONSE INFORMATION

A. Situation

Date of Notification:	2/08/94
Date of Discovery:	11/01/93
Date Action Started:	2/15/94
Material Involved:	Unleaded Gasoline
Quantity Discharged:	7000 + gallons
Substantial Threat:	Yes
Resource Affected:	Unnamed tributary to Ashley Creek, tributary to Green River
Source Identification:	Naples Truck Stop

1. Removal Actions to Date

Removal of contaminated water and soil vapor continues through operation of the dual-phase groundwater pump-and-treat system.

In **May** 1997, approximately **1,085,500** gallons of water were extracted and discharged to the POTW (based on flow measurements for the month of **May**).

2. **Enforcement**

No change from previous Polreps.

B. Planned Removal Actions

Continue to operate, maintain and sample from the operating system unless notified otherwise by USACE/EPA.

C. Next Steps

Continue to monitor the system, including monthly analysis of soil vapor samples at the exhaust of the water treatment system. Continue to monitor effluent to POTW water samples to ensure water can be directly discharged to POTW without treatment.

D. Key Issues

Table 1 shows preliminary results of water sampling from the monitoring wells for **April and May.**

Table 1- Hydrocarbon Concentrations

Well No.	TPH Concentration in April (mg/l)	TPH Concentration in May (mg/l)
MW-1	ND	**ND**
MW-2	2.8	**3.48**
MW-3	ND	**ND**
MW-4	3.1	**4.97**
MW-6	ND	**ND**
MW-8	4.7	**6.88**
MW-9	6.5	**5.49**
MW-10	21.8	**17.6**
MW-14	ND	**ND**
MW-15	ND	**ND**
VMP01	ND	**ND**
VMP02	14	**13.9**
NGMW01	ND	**ND**
NGMW06	ND	**ND**

V. COST INFORMATION

Project Ceiling . . . . . .$ 2,350,000.00

	Costs to Date	Ceiling
Extramural		
TAT	$ 60,000	$ 70,000
USACE (Omaha)	$ 850,000	$ 1,300,000
USACE (Sacramento)	$ 918,000	$ 1,064,429
Intramural		
Direct Reimbursable	$ 9,000	$ 30,000
Direct Recoverable	$ 9,000	

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report is written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

REMOVAL CONTINUES:
H. Hays Griswold, OSC
1500 hrs, May 31, 1997

c:
Rich Haavisto, USACE-Sacramento
Larry Leahy, USACE-Omaha
Mike Sajadi, JEG
Al Meyers, IT Corp.
Renee Zollinger, Kleinfelder

ATTACHMENT A

QUARTERLY MONITORING RESULTS FOR NOVEMBER AND DECEMBER 1996 AND JANUARY 1997

TABLE OF CONTENTS:

PART I

Standard List of Abbreviations

AG	Ambient Air
BZ	Benzene
BZME	Toluene
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
COC	Chain of Custody
DIESELCOMP	Total Hydrocarbons as Diesel
DQA	Data Quality Assessment
EBZ	Ethylbenzene
EPOTW 01	Water Effluent to POTW Sample
FD1	Field Duplicate Sample
HC	Hydrocarbons
J	Indicates an Estimated Value
LCS	Laboratory Control Samples
MG/L	Milligram Per Liter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well Installed by IT Corp
NA	Not Applicable
NGMW	Monitoring Well Installed by EPA
N1	Normal Type Sample
NJ	Indicates Presumptive Evidence of the Presence of the Analyte
PHCG	Petroleum Hydrocarbons as Gasoline
PPBV	Parts Per Billion by Volume
PPMV	Parts Per Million by Volume
QA/QC	Quality Assessment/Quality Control
RC	Reason Code
RPD	Relative Percent Difference
RQL	Reporting Quantitation Limit
SOP	Standard Operating Procedure
TB1	Trip Blank Sample WG

Standard List of Abbreviations (continued)

THCHX	Total Hydrocarbon Hexane
UG/L	Micrograms Per Liter
U	Indicates the Analyte was not Detected and the Associated Value is the Laboratory Reporting Quantitation Limit
USACE	United States Army Corps of Engineers
VEATM 01	Vapor Effluent to Atmosphere Sample
VEBIO 01	Vapor Effluent Sample
VIBIO 01	Vapor Influent Sample
VMP01	Vapor Monitoring Well
WEBIO 01	Water Effluent Sample
WIBIO 01	Water Influent Sample
WG	Groundwater Sample
WQ	Water Quality Sample
WW	Waste Water Sample

PART II.

Data Quality Assessment

This data quality assessment (DQA) for the Naples Truck Stop System is applicable to the following analytical results listed in Table 1, for groundwater and vapor samples collected during the months of February, March, and April 1997.

TABLE 1
SAMPLE LOCATION SUMMARY

Sample Location Name	Sample Location ID	Number of Locations
Groundwater Monitoring Wells	MW01 - 04, 06, 08 - 10, 14, 15, and NGMW01 & 06	twelve wells
Effluent to POTW01	EPOTW01 (March and April only)	one port
Vapor Influent	VIBIO01 (March and April only)	one port
Vapor Monitoring Point #1	VMP01	one port
Vapor Monitoring Point #2	VMP02	one port

The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and total volatile petroleum hydrocarbons (TVPH) as gasoline (PHCG) using the analytical QA/QC requirements specified in SW846 (EPA 3rd edition, November 1990) by methods SW8020 (modified for the analysis of BTEX only) and M8015V (modified for the analysis of gasoline). These samples were analyzed by EMAX Laboratories of Torrance, California.

The vapor samples were analyzed for BTEX and TVPH as PHCG using elements specified in the EPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (April 1984) by method MTO3S (modified for this analysis) for the vapor sampling events. These samples were analyzed by Air Toxics, LTD. of Folsom, California.

In the month of February, no samples were collected at EPOTW01 or VIBIO01 due to inaccessibility. Two samples were collected at each port in the month of March, one day apart, and the second day's event included recovery wells RW09 and RW10 being online. This was done to test the effect of the addition of these two wells on the system and insure that increased concentrations were not going to be above the regulatory limits. The analyte results showed an 89 to 148 percent increase in values for EPOTW01 and a 62 to 86 percent increase in values for VIBIO01 between the two days and this was still within the regulatory limits.

The data are of acceptable quality and are considered usable to support the U.S. Corps of Engineers (USACE), Naples Utah Truck Stop Project. The precision, accuracy, and completeness objectives for this sampling event were met. Table 4 (A & B) shows the sampling and analytical completeness of the number of samples planned and collected, and the number of analytical results accepted. Completeness is measured in two ways; 1) sampling completeness (samples collected vs. planned), and 2) analytical completeness (percent of analytical results with acceptable values vs. the number of requested analyses).

Data Evaluation Process

The samples were organized into work orders. A work order number is assigned by the laboratory and contains all environmental samples received by the laboratory for a given day.

Data verification was performed in accordance with the general principles defined in the Jacobs Data Verification Standard Operating Procedure (SOP). Analytical results for the locations indicated in Table 1 were reported in the work orders listed in Table 2.

TABLE 2
SAMPLE WORK ORDERS

Lab / Work Order Number	Matrix	Analytical Method
EMAX / 97B039	water	M8015V & SW8020
ATL / 9703043	vapor	MTO-3S (modified)
EMAX / 97C020	water	M8015V & SW8020
ATL / 9704022	vapor	MTO-3S (modified)
EMAX / 97D010	water	M8015V & SW8020

The following quality control (QC) parameters were evaluated:

- holding times
- laboratory method blanks
- field blanks (trip blanks)
- surrogate recoveries
- matrix spike and matrix spike duplicate (MS/MSD) recoveries
- laboratory control sample (LCS) recoveries
- field duplicate (FD)precision

All results, including data qualifier flags, are presented in Part III, Summary of Analytical Data from Site Monitoring Wells and in Part IV, Summary of Analytical Data from Site Treatment System of this Attachment A. All analytical results that required the addition of a qualifier flag based on the evaluation process are discussed below, and listed in Table 3. When a result is qualified, a reason code (RC) is also added to the affected sample result and both the qualifier and reason code are entered into the database. The qualifier flags and reason codes used for the Naples project results are summarized below:

Qualifier Flags

J = indicates an estimated value

U = indicates the analyte was not detected at the laboratory Minimum Detection Limit (MDL)

Reason Codes

T = trace concentration detected

8 = **field duplicate precision outside RPD limit**

Holding Times

All samples were analyzed within the technical holding time limits for all of the analytical methods.

Laboratory Method Blanks

All laboratory method blanks were analyzed at the required frequency and all were free of contamination.

Field Blanks

Two trip blanks were collected and analyzed with the associated groundwater samples during February and April 1997. There was a trip blank collected with the associated March samples, but was overlooked during shipment, so the trip blanks were one short of the required frequency for analysis by methods M8015V and SW8020 (BTEX). The March samples were not validated against trip blank QA/QC guidelines. The analyzed trip blanks were free of contamination so the associated samples for February and April did not require qualification, according to QA/QC validation guidelines.

Surrogates

Surrogate compounds are used to measure method performance on a sample-specific basis. These compounds were added to all groundwater samples and recoveries were within control limits for all samples. Surrogates can not be added to vapor samples analyzed by MTO3S.

Laboratory Control Samples

The LCS is the primary measure of accuracy and monitors overall method performance by the laboratory, independent of matrix effects. An LCS (and LCS Duplicate, when MS/MSD pairs were not run) were analyzed at the appropriate frequency with each analytical batch, and all spike recoveries were within the project required control limits.

Matrix Spike/ Matrix Spike Duplicates

The MS/MSD pair is used to measure precision and assess matrix effects. The MS/MSD pairs were analyzed at a frequency of 20 percent for the groundwater samples. All spike recoveries and RPD's were within the project required control limits. MS/MSD pairs were not required on the vapor samples.

Field Duplicates

Field duplicates are collected to measure field sampling precision. Duplicate samples were sampled at a frequency of one per sampling event or 7 percent for methods M8015V and SW8020. Field duplicates were not collected for method MTO3S due to the small number of samples (one per event). The sampling port EPOTW01, where the field duplicate is normally collected, was shut down in February so MW02 was sampled for a field duplicate. The EPOTW01 sample port was online and sampled with field duplicates in March and April. The precision objective for field duplicate analyses is an RPD of less than 40% for groundwater samples. The sample and field duplicate for April had an RPD of 45% for gasoline and the results analyzed by M8015V were qualified as estimated (J) with a reason code (8) for field duplicate precision. The precision objectives were met for the other samples and field duplicates collected. Those sample results requiring qualification are listed in Table 3.

Trace Values

Nine samples analyzed by method SW8020 had analytes that were qualified because the detected concentrations were greater than the method detection limit but less than the practical quantitation limit. These results were considered too low to be accurately

quantitated so they were qualified as estimated concentrations (J) with a reason code of (T) for trace (see Table 3).

Table 3
SUMMARY OF QUALIFIED DATA

Location Id	Lab Sample Number	Date Sampled	Matrix	Method	Analyte	Result Value, Qualifier & Reason Code
MW02	97B039 - 02	11-Feb-97	water	SW8020	toluene	6.98 J(T)
	97C020 - 02	04-Mar-97	water	SW8020	toluene	3.69 J(T)
MW04	97B039 - 04	11-Feb-97	water	SW8020	toluene	2.07 J(T)
MW08	97C020 - 06	04-Mar-97	water	SW8020	toluene	28.6 J(T)
MW09	97B039 - 07	11-Feb-97	water	SW8020	xylenes	11.5 J(T)
MW15	97D010 - 17	02-Apr-97	water	SW8020	benzene	.715 J(T)
	97D010 - 17	02-Apr-97	water	SW8020	xylenes	.796 J(T)
NGMW01	97C020 - 14	04-Mar-97	water	SW8020	benzene	.411 J(T)
EPOTW01	97D010 - 10	02-Apr-97	water	M8015V	gasoline	11.7 J(8)
	97D010 - 11	02-Apr-97	water	M8015V	gasoline	7.4 J(8)
VMP01	97D010 - 12	02-Apr-97	water	SW8020	benzene	.937 J(T)
	97D010 - 12	02-Apr-97	water	SW8020	xylenes	.978 J(T)
VMP02	97B039 - 12	11-Feb-97	water	SW8020	toluene	43 J(T)

Completeness

Overall sampling and analytical completeness objectives (100 percent) were met (see Table 4(A) and 4(B)).

TABLE 4 (A)
SAMPLING COMPLETENESS

Sample Event	Groundwater Pump & Treat System, Naples Truck Stop
Laboratory	EMAX Laboratories and Air Toxics, LTD.
Matrix	Groundwater & Soil Vapor
Analytical Methods	MTO-3S, M8015V, & SW8020 (BTEX)
Date of Event	February, March, and April 1997
Total Number of Samples Planned	48
Total Number of Samples Collected	48
Sampling Completeness (%)	100

TABLE 4 (B)
ANALYTICAL COMPLETENESS

Sample Event	Groundwater Pump & Treat System, Naples Truck Stop
Laboratory	EMAX Laboratories and Air Toxics, LTD.
Analytical Methods	MTO-3S, M8015V, SW8020 (BTEX)
Date of Event	February, March, and April 1997
Total Number of Samples Analyzed	48
Total Number of Results Reported	240
Total Number of Results Accepted	240
Total Number of Results Rejected	0
Analytical Completeness (%)	100

* Table 4(A & B) does not include TBs and FDs.

Summary

The quality of the data is acceptable and all analyte results are usable with only minor qualifications. Some analyte results are qualified as estimated (J) due to minor deviations from QA/QC criteria where the values detected were trace level (T) **or the field duplicate precision was outside control limits (8)**. These trace values were between the laboratory Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). Those analyte results below the MDL are qualified as not detected (U). Precision, accuracy, and completeness objectives were met for all analytes.

PART III

Summary of Analytical Data from Site Monitoring Wells

Analytical Data Summary

Monitoring Well Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: M8015

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	PHCG
MW01	11-Feb-97	WG	N1	MG/L	0.19
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
MW02	11-Feb-97	WG	FD1	MG/L	3.7
	11-Feb-97	WG	N1	MG/L	2.8
	04-Mar-97	WG	N1	MG/L	1.2
	02-Apr-97	WG	N1	MG/L	2.8
MW03	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
MW04	11-Feb-97	WG	N1	MG/L	2.3
	04-Mar-97	WG	N1	MG/L	3.5
	02-Apr-97	WG	N1	MG/L	3.1
MW06	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0.3
	02-Apr-97	WG	N1	MG/L	0 U
MW08	11-Feb-97	WG	N1	MG/L	4.3
	04-Mar-97	WG	N1	MG/L	8.2
	02-Apr-97	WG	N1	MG/L	4.7

Analytical Data Summary

Monitoring Well Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: M8015

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	PHCG
MW09	11-Feb-97	WG	N1	MG/L	1.2
	04-Mar-97	WG	N1	MG/L	3.9
	02-Apr-97	WG	N1	MG/L	6.5
MW10	11-Feb-97	WG	N1	MG/L	21
	04-Mar-97	WG	N1	MG/L	18
	02-Apr-97	WG	N1	MG/L	21.8
MW14	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
MW15	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
NGMW01	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
NGMW06	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U

Analytical Data Summary

Treatment System Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: M8015

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	PHCG
EPOTW01	04-Mar-97	WG	FD1	MG/L	3.3
	04-Mar-97	WG	N1	MG/L	3.4
	05-Mar-97	WG	N1	MG/L	5.5
	02-Apr-97	WG	FD1	MG/L	7.4
	02-Apr-97	WG	N1	MG/L	11.7
VMP01	11-Feb-97	WG	N1	MG/L	0 U
	04-Mar-97	WG	N1	MG/L	0 U
	02-Apr-97	WG	N1	MG/L	0 U
VMP02	11-Feb-97	WG	N1	MG/L	9.5
	04-Mar-97	WG	N1	MG/L	13
	02-Apr-97	WG	N1	MG/L	14

Analytical Data Summary

Monitoring Well Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: SW8020

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	BZ	BZME	EBZ	XYLENES
MW01	11-Feb-97	WG	N1	UG/L	89.3	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	10.7	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	3.67	0 U	0 U	0 U
MW02	11-Feb-97	WG	FD1	UG/L	299	0 U	385	380
	11-Feb-97	WG	N1	UG/L	318	6.98 J :T	443	531
	04-Mar-97	WG	N1	UG/L	48.2	3.69 J :T	171	98.4
	02-Apr-97	WG	N1	UG/L	30.9	3.37	144	238
MW03	11-Feb-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
MW04	11-Feb-97	WG	N1	UG/L	606	2.07 J :T	238	351
	04-Mar-97	WG	N1	UG/L	353	73	243	592
	02-Apr-97	WG	N1	UG/L	26.8	1.1	31.7	94.1
MW06	11-Feb-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
MW08	11-Feb-97	WG	N1	UG/L	703	32.4	328	644
	04-Mar-97	WG	N1	UG/L	657	28.6 J :T	410	704
	02-Apr-97	WG	N1	UG/L	343	71.6	171	461
MW09	11-Feb-97	WG	N1	UG/L	394	0 U	39.5	11.5 J :T

Analytical Data Summary

Monitoring Well Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: SW8020

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	BZ	BZME	EBZ	XYLENES
MW09	04-Mar-97	WG	N1	UG/L	1550	0 U	585	654
	02-Apr-97	WG	N1	UG/L	2050	115	309	385
MW10	11-Feb-97	WG	N1	UG/L	33300	4960	4080	20600
	04-Mar-97	WG	N1	UG/L	12400	2460	1590	8400
	02-Apr-97	WG	N1	UG/L	10100	3780	1400	7730
MW14	11-Feb-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
MW15	11-Feb-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0.715 J :T	0 U	0 U	0.796 J :T
NGMW01	11-Feb-97	WG	N1	UG/L	1.68	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0.411 J :T	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
NGMW06	11-Feb-97	WG	N1	UG/L	11.9	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	1.2	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0 U	0 U	0 U	0 U

Analytical Data Summary

Treatment System Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

Facility: Naples Truck Stop, Utah

Method: SW8020

24-Apr-97 -Dec-99

Location	Sample Date	Matrix	Sample Type	Units	BZ	BZME	EBZ	XYLENES
EPOTW01	04-Mar-97	WG	FD1	UG/L	317	464	52.1	771
	04-Mar-97	WG	N1	UG/L	310	454	50.5	758
	05-Mar-97	WG	N1	UG/L	753	857	125	1470
	02-Apr-97	WG	FD1	UG/L	911	1110	153	2120
	02-Apr-97	WG	N1	UG/L	892	1080	153	2080
VMP01	11-Feb-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	04-Mar-97	WG	N1	UG/L	0 U	0 U	0 U	0 U
	02-Apr-97	WG	N1	UG/L	0.937 J :T	0 U	0 U	0.978 J :T
VMP02	11-Feb-97	WG	N1	UG/L	9550	43 J :T	1700	936
	04-Mar-97	WG	N1	UG/L	6430	0 U	1170	535
	02-Apr-97	WG	N1	UG/L	7050	3410	338	7300

PART IV

Summary of Analytical Data from Site Treatment System

Analytical Data Summary

Treatment System Sampling Results Between 1-FEBRUARY-97 and 30-APRIL-97

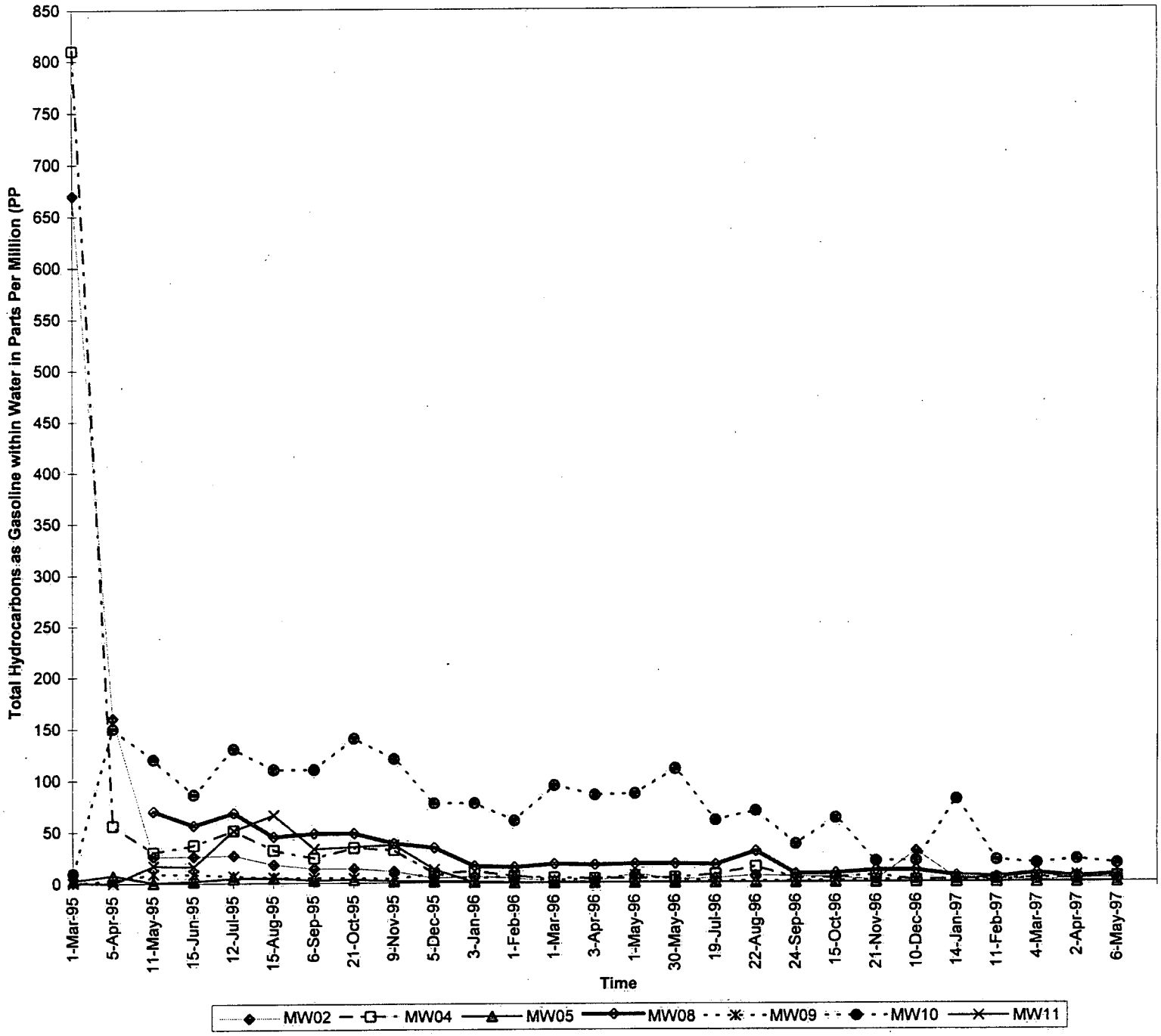
Facility: Naples Truck Stop, Utah

Method: MTO3S

24-Apr-97 -Dec-99

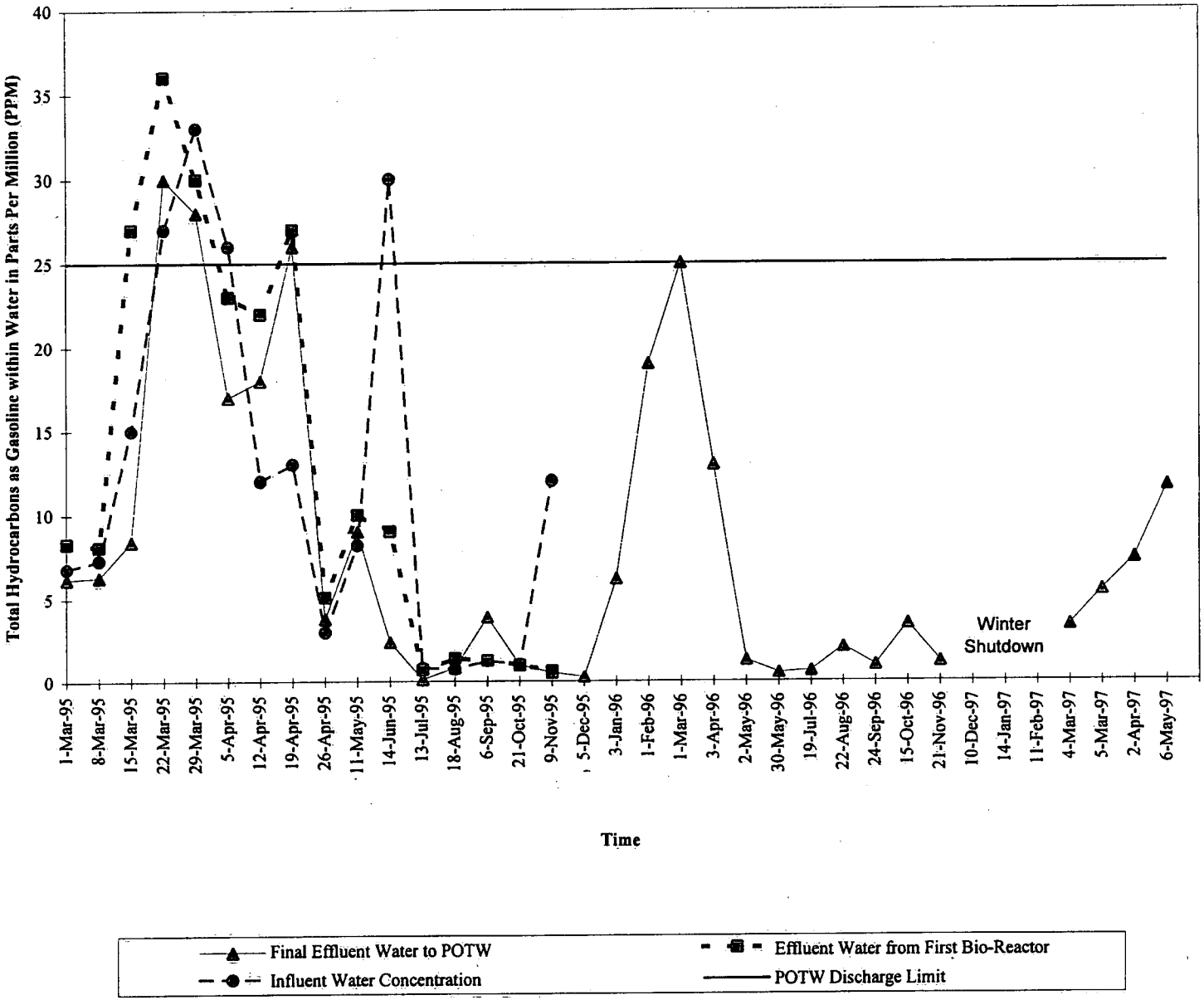
Location	Sample Date	Matrix	Sample Type	Units	BZ	BZME	EBZ	PHCG	XYLENES
VIBIO01	04-Mar-97	GS	N1	PPMV	43	57	5.9	2000	61
	05-Mar-97	GS	N1	PPMV	71	82	11	3300	99
	02-Apr-97	GS	N1	PPMV	40	48	4.5	2000	48

Part V.a Monitoring Well Concentrations Over Time



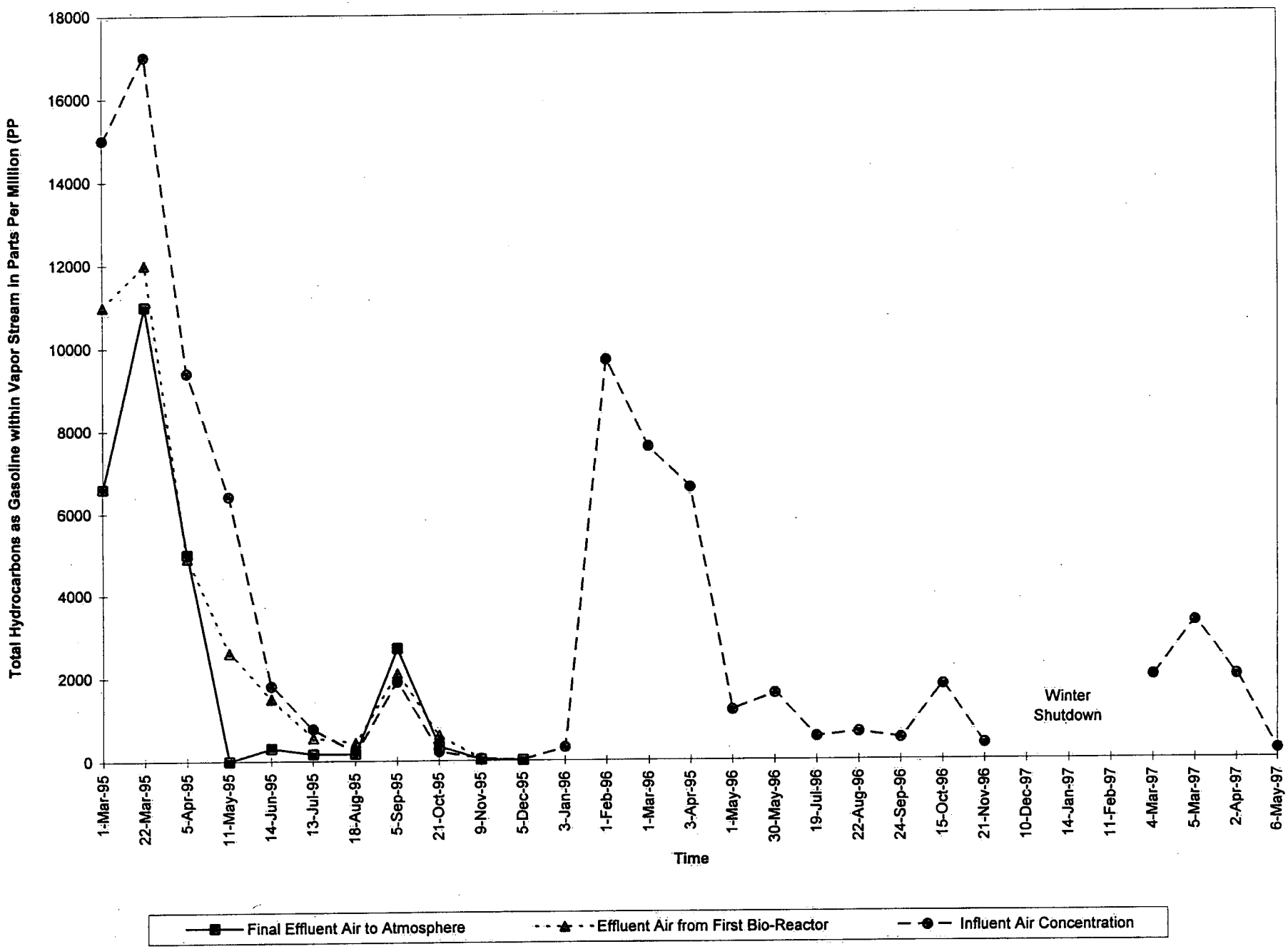
Monitoring Wells showing Detects

Part VI.a Water Treatment Concentrations Over Time



Effective January 1, 1996 Influent Water and Effluent Water from First Bio-Reactor samples were not collected due to Bio-System bypass

Part VII.a Vapor Concentrations Over Time



Effective January 1, 1996 Influent Air and Effluent Air from First Bio-Reactor samples were not collected due to Bio-System bypass

Part VIII

Summary of Quarterly Monitoring Results

PART VIII

Summary of Quarterly Monitoring Results

This quarterly reports covers the period of operation for February, March, and April 1997. During this quarter, the system was off until 21 February due to a scheduled winter shutdown. Following monthly groundwater sampling and installation of two additional recovery wells, the system was restarted. Monthly sampling of groundwater monitoring wells were performed and vapor samples from the treatment system were sampled throughout the quarter.

Results of the data quality assessment included as Part II of this Attachment A indicate the quality of data collected during the quarter is acceptable and all results are usable with only minor qualifications.

Groundwater Monitoring/Treatment System Results For Water

Part V presents the graphical results of sampling from 15 groundwater monitoring wells during the quarter and Part III the summary of analytical data collected. Preliminary data for **May** is also shown on graphics. Detectable concentrations of gasoline and BTEX were measured in **6** of the wells in **February, March, and April**. Concentrations of gasoline were measured by method M8015 and levels of BTEX were measured by method SW8020. All monitoring wells with levels of gasoline contamination greater than the reporting limit as measured by method M8015 were selected for graphical presentation in Part V. Concentrations of gasoline and BTEX were highest from monitoring well No. 10, located near the original center of the groundwater contamination plume. Gasoline concentrations measured in monitoring wells were as follows:

Table 2
Hydrocarbon Concentrations

Well No	TPH Concentration in February (mg/l)	TPH Concentration in March (mg/l)	TPH Concentration in April (mg/l)
MW-1	0.19	ND	ND
MW-2	2.8	1.2	2.8
MW-3	ND	ND	ND
MW-4	2.3	3.5	3.1
MW-6	ND	0.3	ND
MW-8	4.3	8.2	4.7
MW-9	1.2	3.9	6.5
MW-10	21.0	18.0	21.8
MW-14	ND	ND	ND
MW-15	ND	ND	ND
VMP01	ND	ND	ND
VMP02	9.5	13.0	14
NGMW01	ND	ND	ND
NGMW06	ND	ND	ND

PART VIII

Summary of Quarterly Monitoring Results (Continued)

Overall, concentrations of gasoline measured from the 15 wells **increased** from an average of **5.9 mg/l** as gasoline in **February** to **8.8 mg/l** in **April**. BTEX concentrations generally coincided with measured concentrations of gasoline since BTEX compounds are a component of gasoline. (Refer to Part III for complete details).

Part VI presents the graphical results of water treatment concentrations collected during the quarter and Part IV presents the summary of analytical data collected. The effluent to POTW water sample result collected in **March, and April** indicates hydrocarbons measured as gasoline well below the 25 ppm POTW discharge limit (**5.5 mg/l and 11.7 mg/l**). Effluent concentrations to the system were collected immediately following the air-water separator and have been consistently below the discharge limit for the past **seven** quarters of monitoring.

As can be seen in the Part VI graph, the effluent to POTW water sample collected in **March through April** appears to indicate **increasing** contaminant concentrations. During **March and April**, extraction wells RW-1, RW-2, RW-3, RW-4, RW-5, RW-6, RW-9, and RW-10 were online. Well RW-1 lies within the area of highest concentration within the site.

During the month of February, the system operated for approximately one week of the month due to a scheduled winter shutdown. Approximately 22 gallons per minute were processed during **February,** 28 gallons per minute during **March,** and **21** gallons per minute during **April.** The estimated total flow processed during the quarter was some **1,685,000** gallons over **45** days of operation.

The **average** effluent water concentration measured as gasoline **over the period** was **8.6 ppm** based on samples collected in **March and April.** The total effluent load of gasoline extracted from the groundwater over 45 days **(due to winter shutdown)** is some **88** pounds calculated using effluent concentration.

<u>Treatment System Results for Vapor</u>

Part VII presents the graphical results of vapor treatment concentrations over time and Part IV the summary of analytical data collected off of the treatment system. Concentrations of influent soil vapor as gasoline during **March and April** were measured at **3,300 ppmv and 2,000 ppmv, respectively. This change in concentrations is due to continuous operation in this period.** As the number and location of active extraction wells is changed, the concentration of gasoline in the vapor will change accordingly. An estimated average flow of **80** cubic feet per minute (cfm) is processed through the system based on system air flow measurements. The total air flow processed during the quarter was some **5,184,000** cubic feet or **115,000** cubic feet per day (cfd).

The total vapor over the quarter is some **3,000** pounds based on the vapor concentration. To date, approximately **65,000** pounds of volatile hydrocarbons have been removed from the recovery wells.

JACOBS ENGINEERING

June 5, 1997

Transmittal
Tr# 97U005

TO: Mr. Rich Haavisto
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ON: Contract No. DACA05-92-D-0040, Delivery Order 15
JEG Project No. 27-H103-15 Vernal,Utah - Vernal Naples Truck Stop

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ENCL NO.	DRAWING OR SPEC NUMBER	REV.	DESCRIPTION	DATE
1.		0	POLREP #27/JE #45	6 Jun 97
2.		0	Quarterly Report	

REMARKS:

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